

Engineering Design Process

Step 1: Define and Step 2: Research

1. Define Problem:

- Observe the world around you
- **What** is the problem or need? What = Need
- **Who** has the problem or need? Who = User
- **Why** is it important to solve? Why = Insight

2. Research Existing Solutions:

- Don't reinvent the wheel
- See what is out there
- Ask: what can I make better?

Step 3: Develop

- Brainstorm **Designs**
 - ANYTHING is possible
- Brainstorm **Ethics**
 - What is right?
 - What is wrong
 - What could go wrong?



Step 4: Choose and Step 5: Build

4. Choose Design:

- Optimize
 - Time
 - Money
 - Resources

5. Make Prototype:

- Optimize
 - Time
 - Money
 - Resources

Step 6: Test

6. Test Prototype:

- Conduct experiment
- Scientific Method



Step 7:Communicate

7. Communicate Results:

- Did your design do what you intended it to do?
- Did your design solve your problem?
- Did your design solve different problem?
- Implement
 - Patent
 - Market
 - Sell

Ongoing Reiterate!

- Repeat steps as needed! If something doesn't work, start over!

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